

# BBSI: NIH-NSF Bioengineering and Bioinformatics Summer Institutes Program

Sohi Rastegar, NSF  
Richard Swaja, NIH

# NIH-NSF BIOENGINEERING AND BIOINFORMATICS SUMMER INSTITUTES (BBSI)

*Our real  
Focus*

- Agencies –  
NIH: NIBIB and NHGRI  
NSF: BIO, CISE, EHR, ENG, MPS Directorates
- **Description** – To provide students majoring in the biological sciences, computer sciences, engineering, mathematics, and physical sciences planned interdisciplinary bioengineering or bioinformatics research and education experiences; thereby **increasing the number of people considering careers in bioengineering and bioinformatics at the graduate level and beyond.**

# Chronology- (The Story)

- 1999-2000- **Informal chats** during monthly rides from NSF to BECON meeting.
- Fall 2000- Idea of **training and education** in **Bioengineering and Bioinformatics** germinated and presented at BECON
- Fall 2000- **Working groups** started NSF (appointed by OD) and NIH (via BECON). Regular meetings.
- Dec 2000- **NIBIB was signed into Law**
- Winter/Spring 2001- Plan Extramural Workshop
- Summer 2001- **Extramural Workshop**
- Fall 2001- Workshop into tangibles— **BBSI Program as First Step.**
- Spring 2002- developed, approved, and **Released PA**
- Fall 2002- **Awarded 9 BBSI Institutes.**

*"Community of Practice"*

# The People

- **NIH**

Dick Swaja NIBIB (NIH Coordinator)  
Bettie Graham NHGRI  
Mollie Sourwine NIBIB  
Warren Jones NIGMS  
Walter Schaffer NIH/OER  
Meredith Temple-O'Connor NIBIB

Wendy Baldwin

Donna Dean

Rod Pettigrew

*Can't forget: It is the people  
who make things happen*

- **NSF**

Sohi Rastegar, ENG (NSF Coordinator)  
Mary Poats, ENG  
Lynn Preston, ENG  
Bruce Hamilton, ENG  
Leon Esterowitz, ENG  
Rob Last, BIO  
Jane Silverthorne, BIO  
Sylvia Spengler, CISE  
Wyn Jennings, EHR  
Denise Caldwell, MPS

Joe Bordogna

Deborah Crawford

Esin Gulari

- Former Members:  
Mita Desai CISE  
Chris Cullis BIO  
Roger Salters EHR

# Year 1 Outcomes

- Nine BBSI's in operation
- **128 STUDENTS** (about 78% undergraduate and 22% graduate) benefited from BBSI. 35% of the students plan to return for 2nd year.
- **FACULTY-STUDENT RATIO:** ~ 1:1 .
- **UNDERREPRESENTED GROUPS:** 15% of participant
- **WOMEN:** 40% of participants
- **INTERDISCIPLINARY:** Faculty from an average of 7 different departments.
- **IMPACT BEYOND INSTITUTIONS.** More than half of the participants were from outside the sponsoring universities.

# Issues/Challenges and Their Resolution

- **How to get started?** Intramural Group meeting (“community of practice”)
- How to make sure there is support at all levels? Involve **leadership at all agencies from inception**; get input from **extramural community**.
- Digesting Workshop recommendations into tangible. **Focus on one ‘small’ executable task.**
- Consensus of AD’s at NSF for 5-directorate activities. **Leadership of ENG AD- Keep her in the loop regularly..**
- **FISCAL DEADLINES AND FUNDS- when there’s a will... 😊**

# Lessons Learned

- **BOTTOM-UP + TOP-BOTTOM:** Get buy-in from the beginning.
- **WORK TOGETHER FROM GET-GO:**
  - Idea → Develop/Implement → Results
- **MANY PERSPECTIVES-** Get as many perspectives as you can in formative stages
- **JUXTAPOSED INTERESTS-** Approach it from the point of view of benefit to both (all) agencies....
- **BOTTOM LINE** - Commitment and dedication- people involved have to really want to make it work. It will not work if focus is on parochial interests of one agency.